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**Ischemia as a factor affecting innate immune responses in kidney transplantation.**

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**Public Summary:**

**PURPOSE OF REVIEW:** Ischemic injury inevitably occurs during the procurement of organs for transplantation, and the injury is worsened by inflammation following reperfusion. The purpose of this review is to describe the role of the innate immune system in ischemia-induced renal injury in kidneys procured for transplantation. The key role of pattern recognition receptors in immune responses to ischemia is described. Innate immune receptors are emerging novel targets for the amelioration of ischemic injury of donor kidneys. **RECENT FINDINGS:** Several families of pattern recognition receptors are direct mediators of early injurious events during kidney procurement, and also innate and adaptive immune responses after transplantation. The deleterious events associated with the activation of the innate immune system in donor kidneys significantly contribute to short and long-term allograft outcomes. **SUMMARY:** Although a number of therapies have been proposed to decrease ischemic donor kidney injury, targeting the innate immune system is an exciting new area that is gaining significant interest in transplantation. As we learn more about how these important receptors are regulated by ischemia, strategies will likely evolve to allow their modulation in ischemic renal injury.

**Scientific Abstract:**

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